

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: KWON, Young-Jun

SERIAL NO.: 10/598497

ART UNIT: 3722

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EXAMINER: Guidotti, L. C.

TITLE: FUNCTIONAL TOOTHBRUSH

Amendment A: CLAIM AMENDMENTS

Claims 1 - 8 (canceled).

1. (canceled)

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

7. (canceled)

8. (canceled)

9. (new) A functional toothbrush comprising:

a body; and

a head formed at one end of said body, head having longitudinally elongate grooves adjacent respective outer edges of said head, said head having laterally elongate grooves formed centrally of said head between said longitudinally elongate grooves;

a first plurality of rows of needle-shaped bristles positioned by a wire in said

longitudinally elongate grooves; and

a second plurality of rows of needle-shaped bristles positioned by a wire in said laterally elongate grooves, each of the needle-shaped bristles in said first plurality of rows having a length that is longer by between 1.5 millimeters and 3.5 millimeters than a length of each of the needle-shaped bristles in said second plurality of rows, each of said longitudinally elongate grooves having an elliptical shape, each of said laterally elongate grooves having an elliptical shape.

10. (new) The functional toothbrush of Claim 9, the needle-shaped bristles of said first and second plurality of rows having end points of differing thicknesses and differing tapering lengths from the end points, the differing thicknesses being between 0.01 millimeters and 0.03 millimeters, the differing tapering lengths being between 5 millimeters and 12 millimeters.

11. (new) The functional toothbrush of Claim 9, each of said longitudinally elongate grooves and said laterally elongate grooves having a minor axis of between 1.6 millimeters and 2.5 millimeters in length and major axis of between 2.5 millimeters and 5.0 millimeters in length.

12. (new) The functional toothbrush of Claim 9, each of the needle-shaped bristles of said first and second plurality of rows being folded so as to have a first end extending outwardly of the groove for a first distance and a second end extending outwardly of the groove for a second distance, said first distance being between 0.5 millimeters and 1.5 millimeters greater than said second distance.

13. (new) A method for manufacturing a toothbrush having a head formed at an end of a body, the method comprising:

forming longitudinally elongate elliptical grooves adjacent respective outer edges of the head;

forming laterally elongate elliptical grooves centrally of the head between said

longitudinally elongate grooves;

positioning a first plurality of rows of needle-shaped bristles by a wire in said longitudinally elongate elliptical grooves, each of the bristles of said first plurality of needle-shaped bristles having a length; and

positioning a second plurality of rows of needle-shaped bristles by a wire in said longitudinally elongate elliptical grooves, each of the bristles of said second plurality of needle-shaped bristles having a length that 1.5 millimeters to 3.5 millimeters less than the length of each of the bristles of said first plurality of needle-shaped bristles.

14. (new) The method of Claim 13, further comprising:

forming the bristles of said first and second pluralities of needle-shaped bristles so as to have differing end point thicknesses varying between 0.01 millimeters and 0.03 millimeters and to have differing lengths of taper from the end point of between 5 millimeters and 12 millimeters.

15. (new) The method of Claim 13, each of said longitudinally elongate elliptical grooves and said laterally elongate elliptical grooves having a minor axis of between 1.6 millimeters and 2.5 millimeters in length and a major axis of between 2.5 millimeters and 5.0 millimeters in length.

16. (new) The method of Claim 13, further comprising:

folding the bristles of said first and second pluralities of rows prior to the steps of positioning, each of the bristles having a first end extending outwardly of the head for a first distance and a second end extending outwardly of the head for a second distance, the first distance being 0.5 millimeters and 1.5 millimeters greater than the second distance.